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(54) Container assembly for dosing of food pourable products

(57) The invention relates to a container assembly comprising a container body (2) having a bottom and peripheral walls (20) extending upwardly to form a upper edge (22) and a inner edge (23) which defines an opening (25); a sealing foil (3) removably attached to the container by taking support onto the inner edge (23) to hermetically close the opening (25); a removable lid (5) adapted to engage externally the container body (2) so as to protect the sealing foil (3); a separate dosing disk (4) capable of being inserted to the inner edge (23) so as to close at least partially the opening (25) while having a limited thickness which allows the lid (5) to be replaced over the container. Such an assembly is suitable for conservation and dosing air-sensitive food products such as milk powder, cereals or liquid milk.

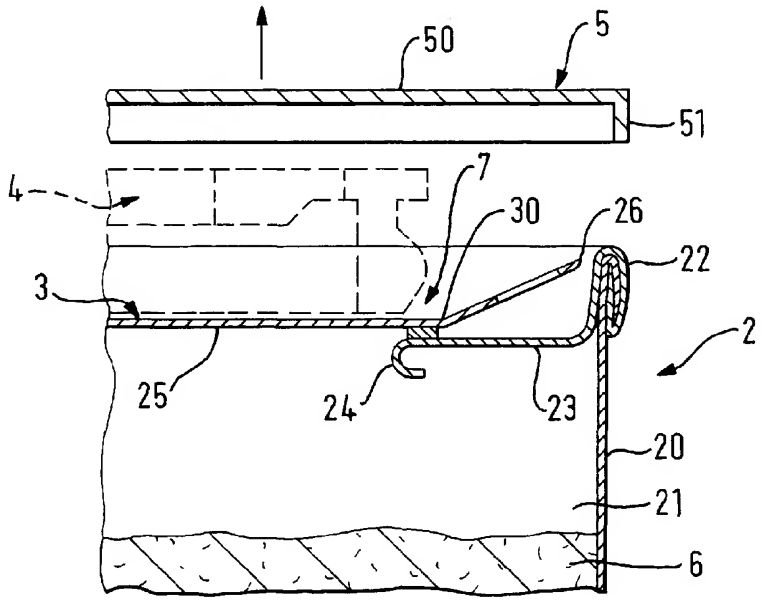

FIG. 2

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Description

[0001] The present invention relates to a container assembly that allows the dispensing of material. In particular, the present invention relates to an improved container assembly for storing and dispensing pourable food material such as powdered or granular food products.

[0002] Especially in the food industry, it has been proved desirable to have granular or powdered products sold in sealed containers, which allow the user to dispense the material with a spoon or a dosing tool. Furthermore, it has also been proved necessary to have the containers re-closed after use to preserve freshness of the food product.

[0003] Preserving the freshness of a product is conventionally obtained by covering the opening of the container with a lid, a cap or a cover, generally made of a simple monolithic plastic unit.

[0004] Some food granular or powdered products such as milk powder, infant formula, cocoa powder, etc., require a high degree of care that leads to have the products packed and sold under hermetically sealed containers. The containers are tight-sealed to secure against the introduction of oxygen and to prevent contamination by microorganisms. It becomes visible when the seal is broken, either by accident or on purpose.

[0005] Containers for granular or powders such as milk, infant formula, etc., are, in general, formed of metal cans. A container of this type comprises a metallic container body having a tubular cross-section, which is tightly closed by a ring onto which is secured an aluminium sealing foil. A plastic lid is, then, adapted to the circular raising edges of the container to protect the sealing foil from the risks of punching. After the aluminium sealing foil has been removed by tearing-off, the plastic lid is used to close the container during all the period of use of the container. The dosing of the can is usually performed by pouring the product or by taking a spoon or any suitable dosing tool. Pouring of the pulverulent or powdered product is undesirable, as it gives a very imprecise dosing of the product and could lead to a high amount of loss of the product. The use of a dosing tool has also some drawbacks as the tool has usually to be included in the container itself, thus, increasing the total costs of the container, and making it cumbersome to put back into the container when the container is still full.

[0006] US 5,407,107 proposes a dispenser closure with a selector cap mounted in covering relation over the sealing disk so as to facilitate the dosing of the powder. However, the solution is not entirely satisfactory, as the container remains open afterwards. Such container can be used for powdered products less sensitive to oxygen such as cheese powder, salt or spices but is absolutely unsuitable for infant formula or milk powders.

[0007] Other various documents can be cited which reflect the state of the art such as US 4,253,587; GB 2 075 951 A; EP 0363 260 A1; EP 0 716 986 A1; and EP 0337 484 A1.

[0008] Therefore, there is still an unsatisfied need to have a container assembly, especially for oxygen-sensitive powders or granular, that provides a perfect tight-sealed arrangement before the first use, a good conservation capacity after the first use, and finally, a convenient dosing arrangement for dispensing the product.

[0009] Accordingly, the present invention provides a container assembly for storage and dosing a pourable food product comprising:

a container body having a bottom and peripheral walls extending upwardly to form an upper edge and an opening;

a hermetic closure means removably attached to the container to hermetically close the opening ;

a separate dosing disk capable of being affixed to the container body so as to at least partially close the opening after removal of the closure means.

[0010] Therefore, the invention provides a shelf stable container during the storage period before the first opening of the container while offering the consumer the possibility to fixedly adapt a convenient dosing system.

[0011] In a preferred embodiment, the container assembly further comprises a removable lid adapted to engage the container body so as to protect the closure means. In particular, the lid prevents the closure means from accidental puncturing while stored before the first opening. The lid also advantageously serves to close the container after the dosing disk has been inserted in place so as to guarantee the freshness of the content after the first use.

[0012] In a preferred embodiment, the container assembly comprises a spacing, between the lid and the sealing foil, sufficient to allow the dosing disk to be freely arranged therein. Therefore, the disk can advantageously be supplied as a non-moving part of the assembly.

[0013] In a preferred embodiment, the hermetical closure means is a removable sealing foil which provides a suitable safety closure as well as an easier opening of the container.

[0014] In a preferred embodiment, the dosing disk comprises at least one dosing opening of reduced size compared to the size of the opening of the container body. Therefore, the dosing of the content is rendered more precise and the use of a separate dosing tool or spoon becomes unnecessary.

[0015] Preferably, the dosing disk comprises an annular peripheral groove that elastically fits the inner circular rounded edge of the container body. Therefore, the disk can be very quickly installed by simply applying onto the disk a certain amount of pressure.

[0016] As mentioned above, the invention has been found to be particularly favourable in connection with the

packaging of powdered or granular food products which requires to be dosed while delivered into a recipient such as a feeding bottle, a plate, a glass, etc.

[0017] The invention will be more fully understood from the following description of specific embodiments thereof.

[0018] In the accompanying drawings,

FIG. 1 is an exploded perspective view of a dispensing container according to the present invention;

FIG. 2 is a partial cross-sectional view of the container assembly along line A-A of FIG. 1 upon removing the lid;

FIG. 3 is a partial cross-sectional view similar to FIG. 2, but upon installing the dosing disk to the container body;

FIG. 4 is a partial cross-sectional view similar to FIG. 3 after the dosing disk has been properly inserted in place;

FIG. 5 is a top view, on a substantially 1:1 scale, of the dosing disk of the invention;

FIG. 6 is a cross-sectional view of the dosing disk, taken on the plane of line B-B in FIG. 5;

FIG. 7 is a top view on a substantially 1:1 scale of the dosing disk of the invention according to a second embodiment of the invention;

FIG. 8 is a cross-sectional view of the dosing disk, taken on the plane of line B-B in FIG. 7;

FIG. 9 is a partial bottom view of the dosing disk of the invention according to the second embodiment;

FIG. 10 is a variant of the container assembly of FIG. 2;

[0019] With reference to FIG. 1, a container assembly according to the present invention is generally designated by reference numeral 1. The container assembly of the invention comprises a main body 2, a sealing foil 3, a dosing disk 4 and an exterior lid 5.

[0020] As shown by FIG. 1 and 2, the main body 2 is of a standard design, generally used for powdered or granular air-sensitive products. It has a bottom (not shown) with a substantially tubular wall 20 extending upwardly to form an inner cavity 21 for the containing the food product 6. At the upper portion of the tubular wall, the body ends by a raising substantially vertically oriented upper edge 22. Similarly, the main body extends internally by a substantially horizontally oriented inner edge 23, which delimits the main body opening.

[0021] In a first embodiment, as illustrated, the inner edge 23 is part of a separate ring-shaped piece attached to the tubular wall. The inner edge 23 ends by a slightly rounded portion 24, which prevents, among other things, the risk of cutting after opening. As it appears in the drawings, the separate ring-shaped piece forming the inner edge 23 is assembled to the rest of the body by a suitable fold arrangement, typically known in the art of manufacturing the metal cans.

[0022] The body has to be hermetically closed before the first opening occurs so as to guarantee a pure, non-contaminated, shelf stable food product. Therefore, the opening 25 is preferably tightly sealed by means of the sealing foil 3. The sealing foil is secured to the upper surface of the container inner edge 23 by a peelable continuous connection 30, which surrounds the periphery of the inner edge. Preferably, the connection is a peelable seal. More preferably, the connection is made of a thermoplastic welded joint. For example, the sealing foil can consist of a laminate having an aluminium layer doubled by an inner thermofusible plastic layer. However, other alternative sealing means are possible such as release chemical adhesive, mechanical bonds or other any suitable combinations thereof. In order to allow the sealing foil to be torn off, an annular tongue 26 is provided in the vicinity of the foil edge.

[0023] In an alternative, the sealing foil could be replaced by another hermetically closure means such as the known "Easy-Opening" system which consists of a metal closure means removably attached to the edge 23 by a seam. The seam is generally a line of weakness that is produced on the top surface of the container. A tongue is usually riveted to the removable portion of the top surface for facilitating the opening of the container. The "Easy-Opening" system is described in detail, for example, in "L'Emballage Sous Toutes Ses Facettes - Laboratoire National d' Essais " edited by CEP Communication; page 122-128)

[0024] The lid 5 is mounted in covering relation over the top of the container body. The lid comprises a substantially plate portion 50 extending downwardly by an annular edge 51, which is intended to engage the upper edge 22 of the body. The assembly formed by the lid and the main body leaves a spacing 7, which is sufficient to allow the dosing disk 4 to be positioned therein. The lid is preferably made of semi-rigid plastic.

[0025] FIG. 3 and 4 illustrate the operation of inserting the dosing disk after the sealing foil has been torn off. The dosing disk 4 comprises an annular peripheral groove 40 provided in the annular ring portion of the disk. Preferably, the disk also comprises a lower rounded annular portion 41 adjacent to the annular peripheral groove and an abutting upper portion 42 forming a right angle with respect to the bottom of the groove. The lower rounded portion 41 favours the introduction of the disk when a vertical pressure is applied to the disk by the user. As the horizontal inner edge 23 of the container is substantially flexible and has a rounded termination 24, the disk can fit more easily in place. The abutting upper

portion 42 forms a radial extension abutting the inner edge 23, so as to prevent the disk from engaging improperly within the container. Preferably, the dosing disk is made of a relatively resilient material. Plastic material is preferred. More preferably, the dosing disk is manufactured by plastic injection.

[0026] FIG. 5 and 6 illustrate a first embodiment of the dosing disk of the invention. The disk comprises a main circular plate 43 with a dosing opening 44, which extends therethrough. Preferably, the opening is provided in off-centred position on the plate to facilitate the dosing operation.

[0027] While a single opening is provided, it can be envisioned to have a plurality of openings. For example, two opening of different section could be provided on opposite location through the plate.

[0028] FIG. 7 and FIG. 8 show a second embodiment of the invention in which the dosing means further comprise a pivotally or flexibly connected gutter 45. The gutter facilitates the guiding of the powder or granular in the recipient while dispensing it. The gutter is mounted in a hinged or flexible manner on outer side 442 of the opening 44 so it is collapsible when the lid is put back to cover the container. FIG. 9 shows the gutter 45 in a flat developed configuration arranged in a manner to be adjacent to the bottom surface 46 of the disk. The gutter comprises a central portion having a substantially trapezoidal shape delimited by two side portions 451, 452 connected to the central portion by pliable lines of demarcation 455, 456. The inner surface of the side portions 451, 452 also comprise protruding edges 453, 454 located close to the outer edge of the portions so as to provide a suitable abutment on the lateral sides 440, 441 of the opening. The gutter can be easily opened out only by applying manual pressure on the central portion 450 of the gutter until it comes to the fully extension of the gutter.

[0029] The configuration of the can may also encompass several modifications as the one illustrated in FIG. 10. The cylindrical portion 20, inner edge 23 and upper edge 22 are made of a unitary folded element. In that particular case, the inner edge 23 has a substantially U-shaped configuration oriented substantially perpendicular to the cylindrical portion 20 of the body. The inner edge is generally made by progressive stamping or similar process. The upper edge 22 is preferably constituted of rounded top end to prevent the risks of injury.

[0030] In an alternative (not shown), the opening of the dosing disk may also comprise its own closure means such as a cap, preferably attached to the opening side by a hinge. The cap may simply be a plastic piece integral with the disk or a plastic piece conceived as a separate element of the disk. In that alternative, the use of the removable lid after inserting the disk in place, is no more necessary for keeping the freshness of the content.

[0031] Whereas the invention is more advantageously adapted for storing and dosing sensitive pulverulent food products, it is not necessary limited to this application. Thus, the container assembly could also contain a liquid food product such as concentrated milk or cream. As for concentrated milk, the usual way of dispensing it in pierced metal cans can advantageously be replaced by the assembly of the invention. The separate dosing disk, preferably in relatively soft plastic, reduces the risks of cutting the lips when the can is put directly to the mouth.

[0032] The container could also contain dehydrated food products such as dehydrated spices, herbs, peppers, salt, etc.

[0033] While the invention has been described with regard to specific embodiments, it should be noted that various modifications might be made without departing from the scope of the invention. For example the shape of the container could vary. It could be rectangular or have other more complex shapes.

Claims

1. A container assembly (1) for storage and dosing a pourable food product (6) comprising:

   a container body (2) having a bottom and peripheral walls (20) extending upwardly to form a upper edge (22) and an opening (25);

   a hermetic closure means (3) removably attached to the container to hermetically close the opening (25);

   a separate dosing disk (4) capable of being affixed to the container body (2) so as to at least partially close the opening (25) after removal of the closure means (3).

2. A container assembly according to claim 1, wherein the container body comprises a inner edge (23) which transversally delimits the contour of the opening (25); the separate disk (4) being arranged to be capable to engage the inner edge (23) of the container body.

3. A container assembly according to claim 1 or 2, wherein it further comprises a removable lid (5) adapted to engage externally the container body (2) so as to protect the closure means (3).

4. A container assembly according to claim 3, wherein it further comprises a spacing (7), between the lid (5) and the closure means (3), sufficient to allow the dosing disk (4) to be freely arranged therein.

5. A container assembly according to any of claims 1 to 4, wherein the hermetical closure means (3) is a removable sealing foil.

6. A container assembly according to any of claims 2 to 5, wherein the dosing disk (4) comprises an annular peripheral groove (40) that elastically fits the inner circular rounded edge (24) of the container body (2).

7. A container assembly according to claim 6 , wherein the dosing disk (4) comprises a lower rounded annular portion (41) adjacent to the annular peripheral groove (40) and an abutting upper portion (42) forming a right angle with respect to the bottom of the groove (40).

8. A container assembly according to any of the preceding claims, the dosing disk comprises at least one dosing opening (44) of reduced size compared to the size of the opening (25) of the container body (2).

9. A container assembly according to any of the preceding claims, wherein the dosing disk comprises at least one dosing opening (44) positioned in an off-centred location of the disk.

10. A container assembly according to claim 9, wherein the dosing disk further comprises a guiding gutter (45) flexibly or pivotally connected to an edge of the opening (44).

11. A container assembly according to claim 10, wherein the gutter (45) has a flat developed configuration arranged in a manner to be adjacent to the bottom surface (46) of the disk.

12. A container assembly according to any of the preceding claims, wherein the sealing foil is attached to the container by a continuous peelable seals (30).

13. A container assembly according to any of the preceding claims, wherein the dosing disk (4) is made of a relatively resilient plastic material.

14. A container assembly according to any of the preceding claims, wherein the inner edge (23) is part of a separate ring-shaped piece attached to the tubular wall (20).

15. A container assembly according to any of the preceding claims, wherein the container body (2) is a metal can.

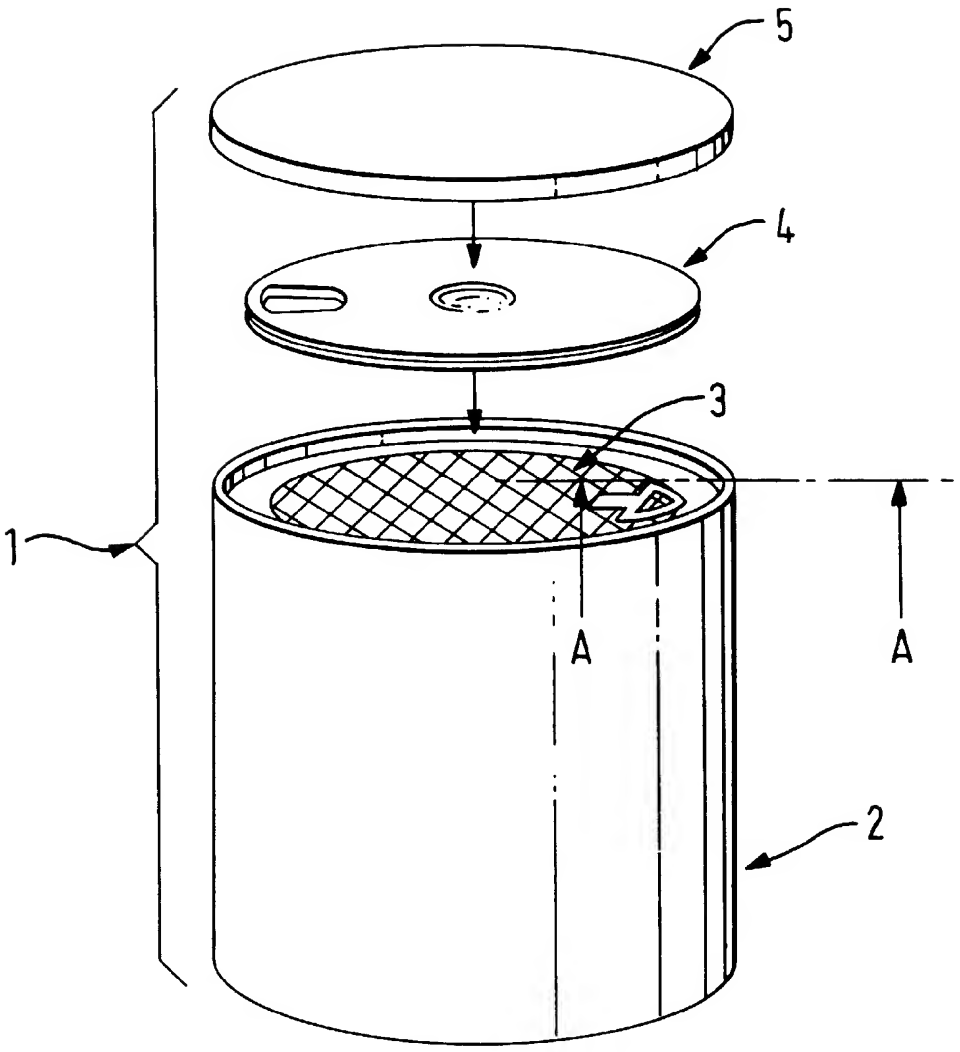


FIG.1

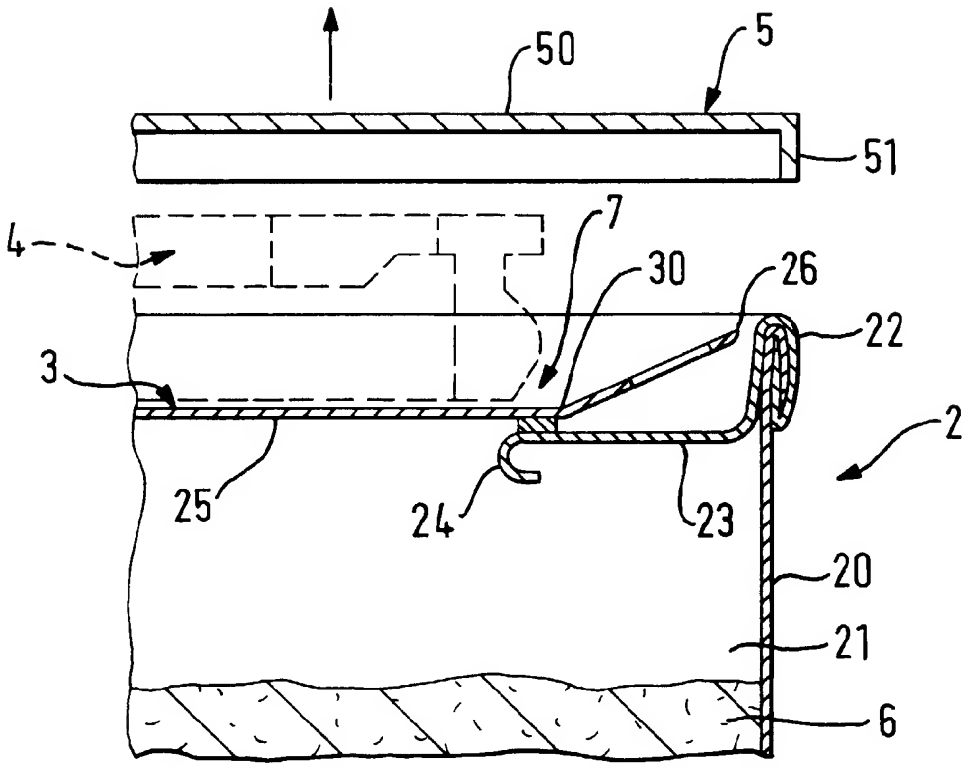


FIG. 2

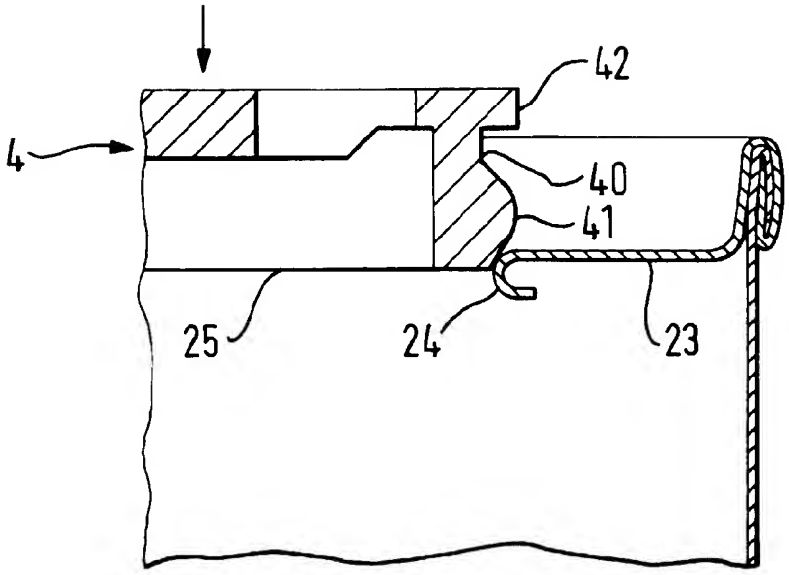


FIG. 3

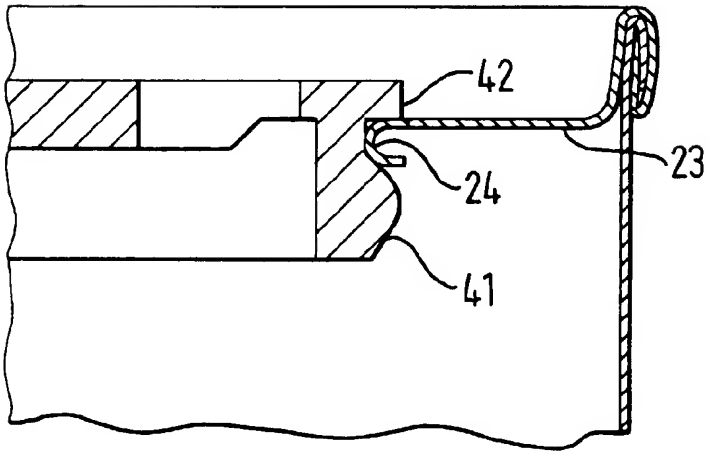


FIG. 4

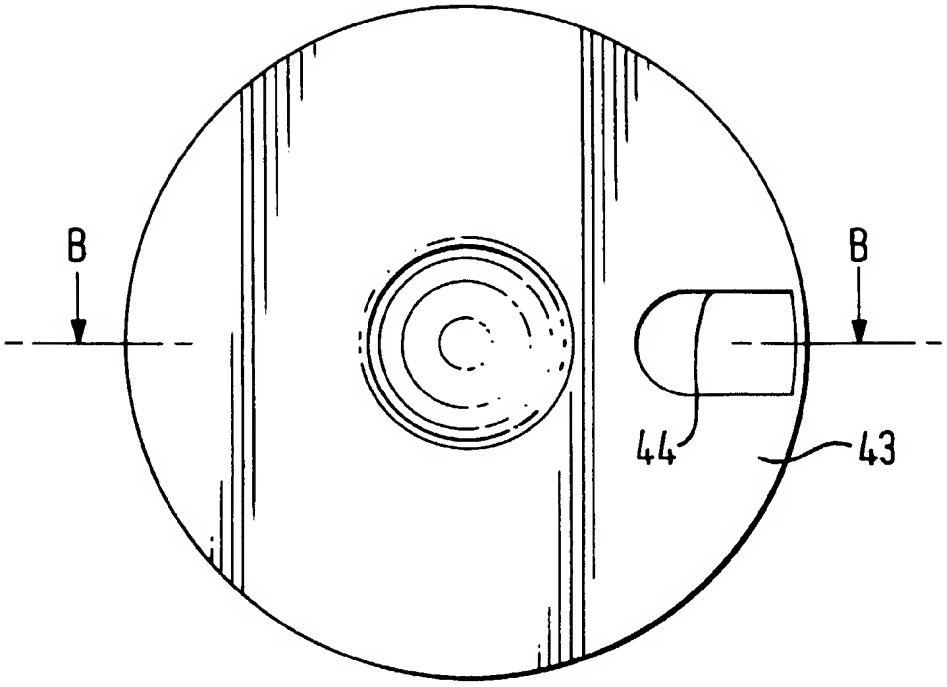


FIG. 5

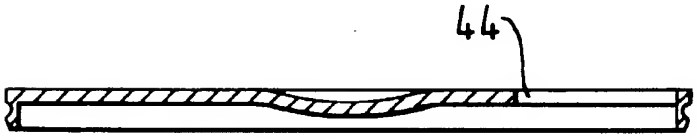


FIG. 6

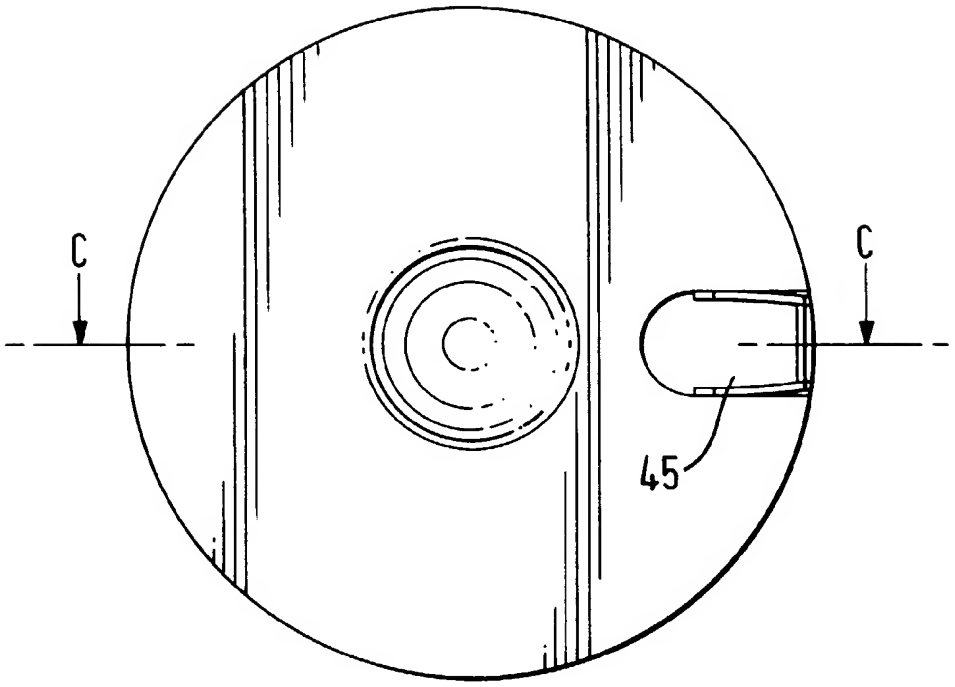


FIG. 7

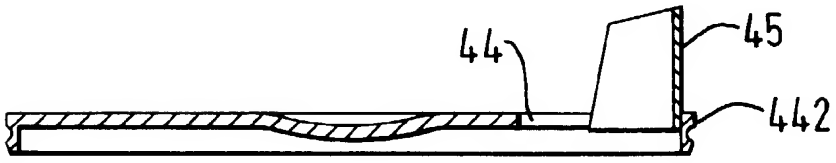
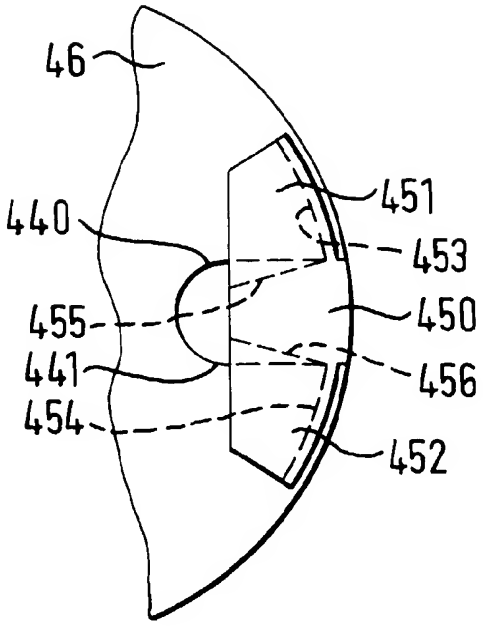


FIG. 8

FIG.9



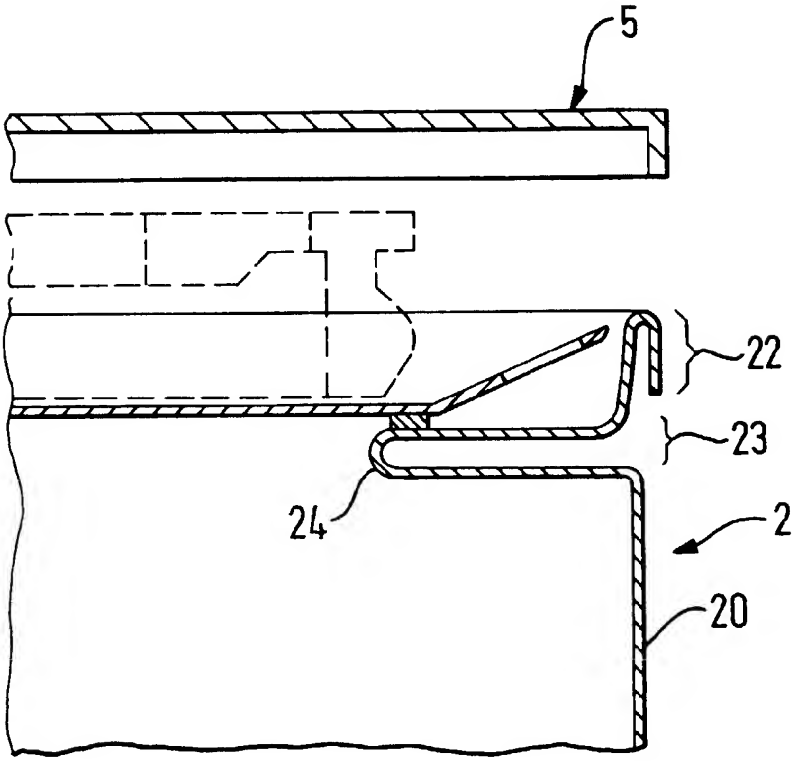


FIG.10

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EUROPEAN SEARCH REPORT

Application Number
EP 99 20 1056

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION
X Y A	US 5 680 968 A (MOORE DAVID N) 28 October 1997 (1997-10-28) * column 2, line 59 - column 4, line 44 * * figures 1-5 *	1,3,5, 8-10,13 2,6,7, 12,14,15 11	B65D51/20
Y	DE 43 42 794 A (SCHMALBACH LUBECA) 20 April 1995 (1995-04-20) * column 5, line 5 - column 6, line 27 * * figures 1-6A *	2,6,7, 14,15	
Y	US 5 176 271 A (PAINCHAUD MICHEL ET AL) 5 January 1993 (1993-01-05) * column 4, line 64 - column 5, line 18 * * figures 1-3 *	12	
X	US 5 551 608 A (MOORE DAVID N ET AL) 3 September 1996 (1996-09-03) * column 2, line 16 - column 3, line 5 * * figures 1-5 *	1,3,5, 8-10	
A	US 5 009 310 A (FINNEY PATRICK D) 23 April 1991 (1991-04-23) * column 4, line 27 - line 62 * * figures 1-6 *	4	TECHNICAL FIELDS SEARCHED B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16 September 1999	Papatheofrastou, M

CATEGORY OF CITED DOCUMENTS

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 99 20 1056

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16-09-1999

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82